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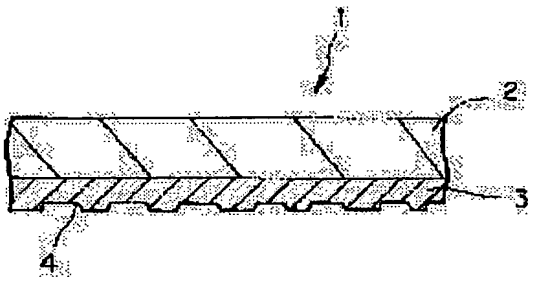
(54) PROCESS RELEASE PAPER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a process release paper usable at a high temperature, not generating peeling of base paper and a releasable resin layer and usable repeatedly.
SOLUTION: The process release paper is constituted of a laminate of the base paper and the releasable resin layer provided on at least one surface of the base paper and the N content of the base paper is set to 10-60 weight %.



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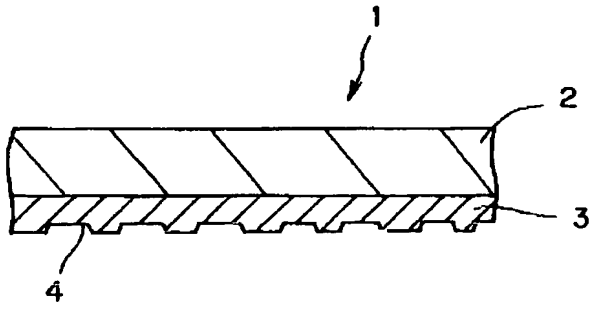
(54)【発明の名称】　工程剥離紙

(57)【要約】
【課題】　高温下で使用可能であり、基紙と離型性樹脂層との剥離が発生せず、繰り返し使用が可能な工程剥離紙を提供する。
【解決手段】　工程剥離紙を、基紙と、この基紙の少なくとも一方の面に設けられた離型性樹脂層との積層体からなる構成とし、基紙のＮ材含有量を１０～６０重量％の範囲内とする。



【特許請求の範囲】
【請求項１】　基紙と該基紙の少なくとも一方の面に形成された離型性樹脂層とを有する工程剥離紙において、前記基紙はＮ材を１０～６０重量％の範囲で含有することを特徴とする工程剥離紙。
【請求項２】　前記基紙の少なくとも前記離型性樹脂層形成面の表面粗さ（Ｒｚ）が１５～３０μｍの範囲内にあることを特徴とする請求項１に記載の工程剥離紙。
【請求項３】　前記基紙は、緊度が０．６８～０．８７ｇ／ｃｍ^{3}の範囲内であり、紙面ｐＨが５～８の範囲内であることを特徴とする請求項１または請求項２に記載の工程剥離紙。
【請求項４】　前記離型性樹脂層は、メチルペンテン系樹脂層であることを特徴とする請求項１乃至請求項３のいずれかに記載の工程剥離紙。
【請求項５】　前記離型性樹脂層は、厚さが２５～１００μｍの範囲内にあることを特徴とする請求項４に記載の工程剥離紙。
【請求項６】　前記離型性樹脂層は、少なくとも１層がメチルペンテン系樹脂層からなる多層構造であることを特徴とする請求項１乃至請求項３のいずれかに記載の工程剥離紙。
【請求項７】　前記離型性樹脂層は、厚さが２５～１００μｍの範囲内にあり、メチルペンテン系樹脂層の厚さが２５μｍ以上であることを特徴とする請求項６に記載の工程剥離紙。
【請求項８】　前記離型性樹脂層は、メチルペンテン系樹脂層とメチルペンテン系樹脂組成物層からなる多層構造であることを特徴とする請求項１乃至請求項３のいずれかに記載の工程剥離紙。
【請求項９】　前記離型性樹脂層は、厚さが２５～１００μｍの範囲内にあることを特徴とする請求項８に記載の工程剥離紙。
【請求項１０】　前記離型性樹脂層は凹凸絵柄を有し、最薄部の厚さが２０μｍ以上であることを特徴とする請求項１乃至請求項９のいずれかに記載の工程剥離紙。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は工程剥離紙に係り、特に合成皮革の製造に使用される工程剥離紙に関する。
【０００２】
【従来の技術】従来から製造されている合成皮革には、ポリウレタン（ＰＵ）レザー、セミ合皮、塩化ビニル（ＰＶＣ）レザー等がある。ＰＵレザーの製造方法としては、例えば、工程剥離紙上にペースト状のＰＵ樹脂を塗布し、乾燥・固化した後に基布を貼合して工程剥離紙から剥離する方法がある。
【０００３】また、セミ合皮の製造方法としては、工程剥離紙上にペースト状のＰＵ樹脂を塗布して乾燥・固化した後、ＰＶＣ発泡層を形成して基布と貼合し、工程剥離紙から剥離する方法がある。
【０００４】さらに、ＰＶＣレザーの製造方法としては、工程剥離紙上にＰＶＣゾルを塗布し、加熱・ゲル化した後、ＰＶＣ発泡層を形成して基布と貼合し、工程剥離紙から剥離する方法がある。
【０００５】上述のように、合成皮革の製造において工程剥離紙は必須の材料であるが、この工程剥離紙は合成皮革の製造過程でかなり過酷な加熱状態に置かれる。すなわち、ＰＵレザーの製造過程では１００～１５０℃で２～５分間、セミ合皮の製造過程では１４０～２００℃で２～５分間、ＰＶＣレザーの製造過程では１８０～２２０℃で２～５分間程度の熱履歴を受ける。
【０００６】従来から使用されている工程剥離紙としては、ＰＵレザー製造用として基紙にポリプロピレン（ＰＰ）を塗布して厚さ２０～５０μｍ程度の離型性樹脂層を設けた工程剥離紙（ＰＰタイプ）がある。また、セミ合皮製造用またはＰＶＣレザー製造用として、基紙にメチルペンテン系ポリマーを塗布して厚さ２０～５０μｍ程度の単層の離型性樹脂層を設けた工程剥離紙（メチルペンテン系樹脂タイプ）、あるいは、基紙にアクリル系樹脂を塗布して厚さ２０～５０μｍ程度の離型性樹脂層を設けた工程剥離紙（アクリル系樹脂タイプ）がある。
【０００７】
【発明が解決しようとする課題】しかしながら、上述のＰＰタイプ工程剥離紙では、離型性樹脂層を構成するＰＰ樹脂の融点が低い（１６０℃前後）ために耐熱性が不足し、セミ合皮製造あるいはＰＶＣレザー製造には使用できないという問題があった。
【０００８】また、メチルペンテン系樹脂タイプの工程剥離紙では、離型性樹脂層の耐熱性は問題ないものの、ＰＶＣレザー製造における使用回数が増すにしたがって、基紙と離型性樹脂層との接着強度低下が生じ、離型性樹脂層と合成皮革層との間ではなく、基紙と離型性樹脂層との間で剥離が生じるという問題があった。
【０００９】更に、アクリル系樹脂タイプの工程剥離紙では、高温加熱処理後の基紙の紙力低下、離型性樹脂層のピンホール発生、架橋タイプのアクリル系樹脂に起因した外力による離型性樹脂層の割れ発生、工程剥離紙に対するエンボス加工の困難性等の問題があった。
【００１０】本発明は、このような事情に鑑みてなされたものであり、高温下で使用可能であり、基紙と離型性樹脂層との剥離が発生せず、繰り返し使用が可能な工程剥離紙を提供することを目的とする。
【００１１】
【課題を解決するための手段】このような目的を達成するために、本発明の工程剥離紙は、基紙と該基紙の少なくとも一方の面に形成された離型性樹脂層とを有する工程剥離紙であって、前記基紙はＮ材を１０～６０重量％の範囲で含有するような構成とした。また、前記基紙の少なくとも前記離型性樹脂層形成面の表面粗さ（Ｒｚ）

が１５～３０μｍの範囲内にあるような構成とした。そして、上記の工程剥離紙において、前記基紙の緊度が０．６８～０．８７ｇ／ｃｍ³の範囲内であり、紙面ｐＨが５～８の範囲内であるような構成とした。

【００１２】また、前記離型性樹脂層がメチルペンテン系樹脂層であるような構成、前記離型性樹脂層の厚さが２５～１００μｍの範囲内にあるような構成とした。また、前記離型性樹脂層は、少なくとも１層がメチルペンテン系樹脂層からなる多層構造であるような構成、前記離型性樹脂層の厚さが２５～１００μｍの範囲内にあり、メチルペンテン系樹脂層の厚さが２５μｍ以上であるような構成とした。

【００１３】また、前記離型性樹脂層がメチルペンテン系樹脂層とメチルペンテン系樹脂組成物層からなる多層構造であるような構成、前記離型性樹脂層の厚さが２５～１００μｍの範囲内にあるような構成とした。さらに、前記離型性樹脂層が凹凸絵柄を有し、最薄部の厚さが２０μｍ以上であるような構成とした。

【００１４】上記のような本発明において、基紙は離型性樹脂層に対して極めて高い接着強度を示し、合成皮革製造時における繰り返し使用において、基紙と離型性樹脂層とが剥離することを防止する作用をなす。

【００１５】

【発明の実施の形態】以下、本発明の実施の形態について図面を参照して説明する。図１は本発明の工程剥離紙の一例を示す概略断面図である。図１において工程剥離紙１は、基紙２と、この基紙２の一方の面に設けられた離型性樹脂層３とからなり、離型性樹脂層３の表面には、凹凸パターン（凹凸絵柄）４が設けられている。尚、図示例では離型性樹脂層３に凹凸パターン（凹凸絵柄）４が設けられているが、本発明の工程剥離紙は凹凸パターン（凹凸絵柄）のないものであってもよい。

【００１６】このような本発明の工程剥離紙１では、基紙２のＮ材含有量を１０～６０重量％、好ましくは２０～４０重量％の範囲内とする。基紙２におけるＮ材の含有量が上記の範囲内にあることにより、後述するように基紙の表面粗さが適度な範囲となり、基紙２のみかけの表面積が大きくなって離型性樹脂層３との接着強度が向上し、工程剥離紙１を用いた合成皮革製造時において、基紙２と離型性樹脂層３の界面において剥離が生じることを防止できる。基紙２のＮ材含有量が１０重量％未満であると、基紙２の平滑性が増し、基紙２への離型性樹脂層３のくいつきが悪くなる。一方、基紙２のＮ材含有量が６０重量％を超えると、後述するようなエンボス加工により良好な凹凸パターン４を離型性樹脂層３の表面に形成することが困難となる。

【００１７】紙は通常Ｌ材（広葉樹パルプ）が主体となっており、このような紙は、繊維の形態上、平坦性が良好である。これに対して、表面の粗さを有する紙を製造する場合、繊維の径、および、繊維の長さが大きいＮ材（針葉樹パルプ）を配合して紙層内の隙間を増大させたり、表面に凹凸をもたらすことが行われる。但し、Ｎ材の含有量が多すぎると、繊維が大きな塊となってブロックを形成し大きな粗・密をつくり、紙の均質性が損なわれる。このため、本発明では、Ｎ材含有量を上記のように設定する。基紙２に使用するＮ材としては、Ｎ－ＢＫＰ、Ｎ－ＢＳＰ、Ｎ－ＵＫＰ等を挙げることができ、Ｌ材としては、Ｌ－ＢＫＰ、Ｌ－ＵＫＰ等を挙げることができる。

【００１８】尚、基紙２は、上記のＮ材、Ｌ材を主体とし、これに損紙、古紙パルプを適宜配合する。また、添加剤としては、内添サイズ剤、カチオン化澱粉、脂肪酸エステル系や特殊パラフィン系等の消泡剤等を用いることができる。基紙製造のサイズプレス工程においては、コーンスターチ、表面サイズ剤等を配合したサイズプレス液を原紙に塗工することができる。このサイズプレス工程を経ることにより、サイズプレス液は基紙の両面に塗布され、基紙内部にも含浸されることになる。

【００１９】基紙２のＮ材含有量を上記の範囲とすることにより、基紙２の少なくとも離型性樹脂層３を形成する面の表面粗さ（Ｒｚ）が１５～３０μｍ、好ましくは１８～２２μｍの範囲内となる。表面粗さ（Ｒｚ）が上記の範囲内にあることにより、基紙２のみかけの表面積が大きくなり、離型性樹脂層３との接着強度が向上し、工程剥離紙１を用いた合成皮革製造時において、基紙２と離型性樹脂層３の界面において剥離が生じることを防止できる。尚、本発明において基紙２の表面粗さ（Ｒｚ）は、小坂研究所（株）製の解析装置付万能表面形状測定器ＳＥ－３Ｆにより測定した十点平均粗さとする。

【００２０】また、本発明では、基紙２の緊度を０．６８～０．８７ｇ／ｃｍ³、好ましくは０．７０～０．８１ｇ／ｃｍ³の範囲内、紙面ｐＨを５～８の範囲内とすることが望ましい。基紙２の緊度を０．６８～０．８７ｇ／ｃｍ³の範囲内とすることにより、表面粗さ（Ｒｚ）を１５～３０μｍの範囲内に調整することがより容易となる。基紙２の緊度が０．６８ｇ／ｃｍ³未満の場合、後述するようなエンボス加工により良好な凹凸パターン４を離型性樹脂層３の表面に形成することが困難となることがある。また、基紙２の緊度が０．８７ｇ／ｃｍ³を超えると、基紙２への離型性樹脂層３のくいつきが悪くなることがある。

【００２１】尚、本発明では、基紙２として、上記のような表面粗さ（Ｒｚ）を有する紙と、ナイロン、ポリエチレンテレフタレート、ポリプロピレン等のプラスチックフィルム、金属箔、織布、不織布、合成紙等との積層体を使用することができる。この場合、少なくとも離型性樹脂層３を形成する面に上記の表面粗さ（Ｒｚ）を有する紙が位置することが必要である。

【００２２】このような基紙２の厚さは、使用する材料等を考慮するとともに、後述するようなエンボス加工に

より凹凸パターン４が離型性樹脂層３の表面に形成できるような厚さに設定することが好ましく、例えば、８０～３００μｍ程度の範囲で設定することができる。また、基紙２の離型性樹脂層３形成側の面は、基紙と離型性樹脂層との密着強度を高めるために予め加熱あるいはコロナ放電処理等を施してもよい。

【００２３】工程剥離紙１を構成する離型性樹脂層３は、アルキッド系樹脂、アクリル系樹脂、ポリエチレン系樹脂、ポリプロピレン系樹脂、ポリメチルペンテン系樹脂、シリコーン系樹脂、紫外線硬化型樹脂、電離放射線硬化型樹脂等の公知の樹脂を使用することができ、合成皮革用の樹脂との剥離性、耐熱性を考慮して選定することができ、特にポリメチルペンテン系樹脂、ポリプロピレン樹脂、および、アルキッド樹脂が好ましい。より好ましくは、離型性樹脂層３を（１）メチルペンテン系樹脂層、（２）少なくとも１層がメチルペンテン系樹脂層からなる多層構造、（３）メチルペンテン系樹脂層とメチルペンテン系樹脂組成物層からなる多層構造のいずれかとすることができる。

【００２４】上記のメチルペンテン系樹脂層は、メチルペンテン系樹脂を用いて形成することができる。ここで、メチルペンテン系樹脂とは、４－メチル－１－ペンテン単独からなるポリマーである。また、メチルペンテン系樹脂とは、例えば、４－メチル－１－ペンテンと他のα－オレフィン、例えば、エチレン、プロピレン、１－ブテン、１－ヘキセン、１－オクテン、１－デセン、１－テトラデセン、１－オクタデセン等の炭素数２～２０のα－オレフィンとの共重合体で、かつ４－メチル－１－ペンテンを９７～９８重量％、α－オレフィンを２～３重量％の範囲で含有する４－メチル－１－ペンテンを主体とした共重合体であって、示差走査型熱量計（ＤＳＣ法）で測定した融点が２３６～２３８℃、ＡＳＴＭＤ１２３８に準じて荷重＝２．１６ｋｇ、温度＝２６０℃の条件で測定したメルトフローレート（ＭＦＲ）が１６０～２００ｇ／１０分の範囲にある樹脂である。

【００２５】上記のメチルペンテン系樹脂組成物層は、メチルペンテン系組成物を用いて形成することができる。ここで、メチルペンテン系組成物とは、例えば、上記の４－メチル－１－ペンテンを主体とした共重合体（４－メチル－１－ペンテンを９７～９８重量％、α－オレフィンを２～３重量％の範囲で含有し、融点が２３６～２３８℃、ＭＦＲが１６０～２００ｇ／１０分の範囲にある共重合体）９５～８５重量部に対して、密度が０．９１０～０．９３０ｇ／ｃｍ^{3}の範囲にあり、示差走査型熱量計（ＤＳＣ法）で測定した融点が１００～１１０℃の範囲にあり、かつＭＦＲが１．０～１００ｇ／１０分の範囲にあるポリエチレン系樹脂を５～１５重量部含有する組成物である。

【００２６】上記（１）のメチルペンテン系樹脂層からなる離型性樹脂層３の厚さは、２５～１００μｍの範囲内であることが好ましい。厚さが２５μｍ未満であると、工程剥離紙１をＰＶＣレザー製造に繰り返し使用した場合に、ＰＶＣレザーの材料として用いられる可塑剤が離型性樹脂層３の分子間に入り込み、高温環境とあいまって、基紙２との界面を侵し、基紙２と離型性樹脂層３の界面での剥離が生じ易くなる。一方、１００μｍを超えると、工程剥離紙の幅カールが大きくなり、加工性の低下を来たすことがある。

【００２７】上記（２）の少なくとも１層がメチルペンテン系樹脂層からなる多層構造をもつ離型性樹脂層３の厚さは、２５～１００μｍの範囲内にあり、メチルペンテン系樹脂層の厚さが２５μｍ以上であることが好ましい。離型性樹脂層３の厚さが１００μｍを超えると、工程剥離紙の幅カールが大きくなり、加工性の低下を来たすことがある。また、離型性樹脂層３を構成するメチルペンテン系樹脂層の厚さが２５μｍ未満であると、工程剥離紙１をＰＶＣレザー製造に繰り返し使用した場合に、ＰＶＣレザーの材料として用いられる可塑剤が離型性樹脂層３の分子間に入り込み、高温環境とあいまって、基紙２との界面を侵し、基紙２と離型性樹脂層３の界面での剥離が生じ易くなる。

【００２８】上記（３）のメチルペンテン系樹脂層とメチルペンテン系樹脂組成物層からなる多層構造をもつ離型性樹脂層３の厚さは、２５～１００μｍの範囲内にあることが好ましい。厚さが２５μｍ未満であると、工程剥離紙１をＰＶＣレザー製造に繰り返し使用した場合に、ＰＶＣレザーの材料として用いられる可塑剤が離型性樹脂層３を構成するメチルペンテン系樹脂層やメチルペンテン系樹脂組成物層の分子間に入り込み、高温環境とあいまって、基紙２との界面を侵し、基紙２と離型性樹脂層３の界面での剥離が生じ易くなる。一方、１００μｍを超えると、工程剥離紙の幅カールが大きくなり、加工性の低下を来たすことがある。このような（３）メチルペンテン系樹脂層とメチルペンテン系樹脂組成物層からなる多層構造をもつ離型性樹脂層３は、例えば、基紙２側からメチルペンテン系樹脂組成物層とメチルペンテン系樹脂層が積層された２層構造とすることができる。この場合、基紙２との接着強度はメチルペンテン系樹脂組成物層により向上し、塩化ビニル用可塑剤ＤＯＰ（フタル酸ジオクチル）等による基紙２と離型性樹脂層３との接着強度低下を防止することができる。また、合成皮革製造に要求される耐熱性、離型性はメチルペンテン系樹脂層により得られる。

【００２９】離型性樹脂層３の形成は、用いる樹脂を基紙２上にロールコート、グラビアコート、押出しコート、ナイフコート、マイヤーバーコート、ディッピングコート等の方式で塗布する方法等により行うことができる。樹脂の硬化方法は、熱硬化方法、紫外線や電離放射線等の硬化法等、いずれの方法であってもよい。

【００３０】離型性樹脂層３に凹凸パターン４をもたな

い工程剥離紙は、上記のような工程により得られる。また、図１に示すような離型性樹脂層３に凹凸パターン（凹凸絵柄）４を持つ工程剥離紙１は、次のようなエンボス工程をとる。すなわち、凹凸を形成したエンボスロールと、その凹凸を受けるペーパーロールまたは金属ロール、あるいは、エンボスロールの凹凸形状に対応した表面凹凸をもつ金属ロールとを対向して備えるエンボス加工機に、上記の離型性樹脂層３がエンボスロールに当接するように工程剥離紙を流し、加熱されたエンボスロールにより圧力をかけて、離型性樹脂層３に凹凸パターン（凹凸絵柄）４を形成する。通常、エンボスロールの加熱温度は８０～１５０℃、圧力は４０～１００ｋｇ／ｃｍ程度が好ましい。尚、ロールプレスだけではなく、平エンボス版を用いて平プレスでエンボス加工を行ってもよい。

【００３１】このように任意の凹凸絵柄をエンボス加工によって離型性樹脂層３に形成した場合、凹凸が若干基紙２部分にまで食い込むが、最終的にはほぼ離型性樹脂層３に形成されるので、離型性樹脂層３には厚みや密度の異なる部分が生じる。そして、凹凸パターン（凹凸絵柄）４をもつ離型性樹脂層３の最薄部（最密部）の厚みは２０μｍ以上であることが好ましい。最薄部の厚みが２０μｍ未満であると、工程剥離紙１をＰＶＣレザー製造に繰り返し使用した場合に、ＰＶＣレザーの材料として用いられる可塑剤が離型性樹脂層３の最薄部から染み込み、高温環境とあいまって、基紙２との界面を侵し、基紙２と離型性樹脂層３の界面での剥離が生じ易くなる。

【００３２】次に、本発明の工程剥離紙を用いた合成皮革の製造について説明する。まず、工程剥離紙の離型性樹脂層上に合成皮革用の樹脂組成物を塗布する。離型性樹脂層上に塗布された樹脂層には、離型性樹脂層の凹凸パターン形状に対応した絵柄（凹凸絵柄）が形成される。その後、これに基布（例えば、織布、不織布等）を貼り合わせ、樹脂層を乾燥し冷却した後、剥離して合成皮革を得ることができる。

【００３３】上記の合成皮革用の樹脂組成物には、ポリウレタン、ポリ塩化ビニル等の樹脂を用いることができる。ポリウレタンを用いる場合は、樹脂組成物の固形分を２０～５０％程度とすることが好ましい。また、ポリ塩化ビニルを用いる場合は、フタル酸ジオクチル、フタル酸ジラウリル等の可塑剤、発泡剤、安定剤等と混合し分散させた樹脂組成物を使用することが好ましい。この樹脂組成物の塗布方法としては、ナイフコート、ロールコート、グラビアコート等の従来公知の塗布方法を挙げることができる。このような本発明の工程剥離紙を用いた合成皮革の製造では、高温下で行なわれるＰＶＣレザー製造の場合においても、基紙と離型性樹脂層との間における剥離が防止され、繰り返し安定生産が可能となる。

【００３４】

【実施例】次に、具体的な実施例を示して本発明を更に詳細に説明する。

【００３５】［基紙の作製］Ｎ材（Ｎ－ＢＫＰ）とＬ材（Ｌ－ＢＫＰ）を下記の表１に示す５種の割合で配合したパルプ原料を４１０～４５０℃の間で叩解したパルプスラリーに対して、サイズ剤としてＡＫＤ（日本ＰＭＣ（株）製ＳＳ－３６２）中性サイズ剤を０．１重量％、湿潤紙力剤としてメラミンを０．５重量％添加した。次いで、このパルプスラリーをｐＨ５．５に調整して原紙を抄造し、サイズプレス工程で両面に酸化デンプン１ｇ／m^2、ＰＶＡ０．５ｇ／m^2の塗布を行い、坪量１２５ｇ／m^2の紙を抄造し、幅１５３０ｍｍにスリッターして、下記表１に示す５種の基紙（Ａ～Ｅ）を得た。これらの基紙の表面粗さ（Ｒｚ）、緊度、紙面ｐＨを測定して下記の表１に示した。

【００３６】

【表１】

表　1

基材	Ｎ材含有量（重量％）	Ｌ材含有量（重量％）	表面粗さ（μｍ）	緊度（g/cm³）	紙面ｐＨ
Ａ	１０	９０	１５	０．８６	５．５
Ｂ	４０	６０	２０	０．７３	５．５
Ｃ	６０	４０	３０	０．６９	５．５
Ｄ	０	１００	１２	０．８９	５．５
Ｅ	７０	３０	３５	０．６６	５．５

【００３７】［離型性樹脂層の形成］まず、離型性樹脂層形成用の樹脂として、下記の２種の樹脂（Ｉ、II）を準備した。

【００３８】・樹脂Ｉ（メチルペンテン系樹脂）：
三井化学（株）製　ＴＰＸ　ＤＸ８２０
（融点＝２３８℃、ＭＦＲ＝１８０ｇ／１０分）

【００３９】・樹脂II（メチルペンテン系組成物）：

三井化学（株）製樹脂
４－メチル－１－ペンテンを主体とした共重合体 … ９０重量部
（４－メチル－１－ペンテンを主体とした共重合体の
融点＝２３８℃、ＭＦＲ＝２００ｇ／１０分）
ポリエチレン系樹脂 … １０重量部
（ポリエチレン系樹脂の密度＝０．９１７ｇ／ｃｍ^3、
融点＝１０６℃、ＭＦＲ＝７．２ｇ／１０分）

【００４０】次に、上記のように作製した５種の基紙（Ａ～Ｅ）と２種の樹脂（Ｉ、II）を下記の表２に示すように組み合わせ、表２に示す押し出し条件で樹脂を押し出しコート法により塗布し乾燥して離型性樹脂層を形成した。形成した各離型性樹脂層の厚みは下記表２に示す通りである。尚、表２において、離型性樹脂層が２層構造である場合、基紙側を第２層とする。また、離型性樹脂層が単層構造の場合、第２層の欄に樹脂、厚みを記載した。

【００４１】［エンボス加工］次いで、凹凸を形成したエンボスロールとペーパーロールとを対向して備えたエンボス加工機に、上記の離型性樹脂層を形成した基紙を、離型性樹脂層がエンボスロールに当接するように通して、離型性樹脂層に凹凸パターンを形成し、１８種の工程剥離紙（試料１～１８）を得た。尚、エンボスロールの温度を１２０℃、エンボスロールによる離型性樹脂層への加圧を６０ｋｇ／ｃｍに設定した。このような凹凸パターン（絵柄）を形成した離型性樹脂層の最薄部の厚みを測定して、下記の表２に示した。

【００４２】［合成皮革の製造］上記のように作製した１８種の工程剥離紙（試料１～１８）を用いて合成皮革を作製した。すなわち、まず、工程剥離紙の離型性樹脂層側に、ＰＶＣ樹脂（分子量１０００）を１００部、ＤＯＰ（可塑剤）を６０部、発泡剤を５部、安定剤を２．５部の割合で含有した合成皮革表皮用のＰＶＣ樹脂組成物をナイフコート法で塗布し、乾燥（１９０～２００℃、２分間）した。その後、ウレタン系接着剤をナイフコート法で塗布して乾燥し、この接着剤面に基布を貼り合わせ、乾燥して熟成後に工程剥離紙から剥離して、凹凸パターンに対応した凹凸絵柄を離型性樹脂層に有する合成皮革を得た。尚、上記の合成皮革の作製は、温度２５℃、湿度２０％の環境下で行い、同条件で１０回繰り返した。また、各工程剥離紙の基紙と離型性樹脂層との接着強度を引張り強度試験機にて温度２３℃、湿度５０％の環境下で、試料幅１５ｍｍ、引張り速度２００ｍｍ／分、９０°剥離の条件で測定し、結果を下記の表２に示した。

【００４３】
【表２】

表 2

工程剥離紙	基紙	離型性樹脂層の樹脂、厚み		押し出し条件 (℃)	最薄部厚み (μm)	接着強度 (N/m)
		第1層	第2層 (単層)			
1	A	I 25μm	II 25μm	320	25	45.5
2	B	I 25μm	II 25μm	320	25	45.8
3	C	I 25μm	II 25μm	320	25	45.9
4	A	—	II 50μm	320	25	44.3
5	B	—	II 50μm	320	25	44.6
6	C	—	II 50μm	320	25	45.0
7	B	I 30μm	II 30μm	320	35	45.6
8	B	I 40μm	II 40μm	320	55	45.8
9	D	I 60μm	II 60μm	320	80	48.0
10	D	I 10μm	II 10μm	320	10	16.5
11	D	I 25μm	II 25μm	310	15	29.5
12	D	I 25μm	II 25μm	320	10	13.0
13	D	I 25μm	II 25μm	320	25	33.2
14	E	I 60μm	II 60μm	320	80	48.0
15	E	I 10μm	II 10μm	320	10	19.5
16	E	I 25μm	II 25μm	310	15	29.5
17	E	I 25μm	II 25μm	320	10	17.5
18	E	I 25μm	II 25μm	320	25	34.5

【0044】表2に示される工程剥離紙のうち、基紙のN材の含有量が10～60重量%の範囲にある試料1～8は、基紙の表面粗さ（Rz）が15～30μmの範囲であり、10回の合成皮革製造において基紙と離型性樹脂層との剥離が発生しなかった。

【0045】これに対して、N材の含有量が10重量%未満である基紙を用いた工程剥離紙（試料9～13）、および、N材の含有量が60重量%を超える基紙を用いた工程剥離紙（試料14～18）は、合成皮革製造において以下の不具合が生じた。

試料9、14：幅カールが生じ、合成皮革製造時の加工性低下を来たした。

試料10～13：基紙と離型性樹脂層との接着強度が低く、10回の合成皮革製造において基紙と離型性樹脂層との剥離がみられた。

試料14～18：表面粗さが大きすぎ、エンボス加工した離型性樹脂層面の絵柄が、エンボスロールの凹凸パターンに完全に追従したものとならなかった。

【0046】

【発明の効果】以上詳述したように、本発明によれば工程剥離紙を、基紙と、この基紙の少なくとも一方の面に設けられた離型性樹脂層との積層体からなる構成とし、基紙がN材を10～60重量%の範囲で含有するので、基紙と離型性樹脂層との接着強度が向上し、本発明の工程剥離紙を用いた合成皮革の製造では、繰り返し使用しても基紙と離型性樹脂層とが剥離することが防止される。また、離型性樹脂層にメチルペンテン系樹脂を用いることにより高温下でのPVCレザー製造が可能となる。

【図面の簡単な説明】

【図1】本発明の工程剥離紙の一例を示す概略断面図である。

【符号の説明】

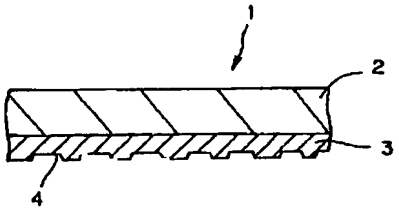
1…工程剥離紙

2…基紙

3…離型性樹脂層

4…凹凸パターン（絵柄）

【図1】



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CLAIMS

[Claim(s)]
[Claim 1] It is the process releasing paper characterized by said base paper containing N material in 10 - 60% of the weight of the range in the process releasing paper which has the mold-release characteristic resin layer formed in one [at least] field of a base paper and this base paper.
[Claim 2] The process releasing paper according to claim 1 characterized by being within the limits of [whose surface roughness (Rz) of said mold-release characteristic resin layer forming face is 15-30 micrometers at least] said base paper.
[Claim 3] Said base paper is a process releasing paper according to claim 1 or 2 characterized by for bulk density being within the limits of 0.68 - 0.87 g/cm3, and Space pH being within the limits of 5-8.
[Claim 4] Said mold-release characteristic resin layer is a process releasing paper according to claim 1 to 3 characterized by being a methyl pentene system resin layer.
[Claim 5] Said mold-release characteristic resin layer is a process releasing paper according to claim 4 characterized by being in within the limits whose thickness is 25-100 micrometers.
[Claim 6] Said mold-release characteristic resin layer is a process releasing paper according to claim 1 to 3 characterized by being the multilayer structure which at least one layer becomes from a methyl pentene system resin layer.
[Claim 7] Said mold-release characteristic resin layer is a process releasing paper according to claim 6 which is in within the limits whose thickness is 25-100 micrometers, and is characterized by the thickness of a methyl pentene system resin layer being 25 micrometers or more.
[Claim 8] Said mold-release characteristic resin layer is a process releasing paper according to claim 1 to 3 characterized by being the multilayer structure which consists of a methyl pentene system resin layer and a methyl pentene system resin constituent layer.
[Claim 9] Said mold-release characteristic resin layer is a process releasing paper according to claim 8 characterized by being in within the limits whose thickness is 25-100 micrometers.
[Claim 10] Said mold-release characteristic resin layer is a process releasing paper according to claim 1 to 9 which has a concavo-convex pattern and is characterized by the thickness of the thinest part being 20 micrometers or more.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the process releasing paper which is applied to a process releasing paper, especially is used for manufacture of synthetic leather.
[0002]
[Description of the Prior Art] There are a polyurethane (PU) leather, semi artificial leather, a vinyl chloride (PVC) leather, etc. in the synthetic leather currently manufactured from the former. After applying paste-like PU resin on a process releasing paper and drying and solidifying as the manufacture approach of PU leather, for example, the approach of pasting a base fabric together and exfoliating from a process releasing paper is.
[0003] Moreover, as the manufacture approach of semi artificial leather, paste-like PU resin is applied on a process releasing paper, and desiccation and after solidifying, a PVC foaming layer is formed and it pastes together with a base fabric, and there is the approach of exfoliating from a process releasing paper.
[0004] Furthermore, after applying a PVC sol on a process releasing paper and heating and gelling as the manufacture approach of a PVC leather, a PVC foaming layer is formed, it pastes together with a base fabric, and there is the approach of exfoliating from a process releasing paper.
[0005] As mentioned above, although a process releasing paper is an indispensable ingredient in manufacture of synthetic leather, this process releasing paper is put on a quite severe heating condition in the manufacture process of synthetic leather. namely, -- the manufacture process of PU leather -- the manufacture process of a PVC leather receives [in the manufacture process of semi artificial leather] the 2 - 5-minute room [about] heat history at 180-220 degrees C for 2 - 5 minutes for 2 - 5 minutes by 100-150 degrees C at 140-200 degrees C.
[0006] There is a process releasing paper (PP type) which applied polypropylene (PP) to the base paper as an object for PU leather manufacture, and prepared the mold-release characteristic resin layer with a thickness of about 20-50 micrometers as a process releasing paper currently used from the former. Moreover, there is a process releasing paper (methyl pentene system resin type) which applied the methyl pentene system polymer to the base paper, and prepared the mold-release characteristic resin layer of a monolayer with a thickness of about 20-50 micrometers as the object for semi artificial leather manufacture or an object for PVC leather manufacture, or a process releasing paper (acrylic resin type) which applied acrylic resin to the base paper and prepared the mold-release characteristic resin layer with a thickness of about 20-50 micrometers.
[0007]
[Problem(s) to be Solved by the Invention] However, in above-mentioned PP type process releasing paper, since the melting point of PP resin which constitutes a mold-release characteristic resin layer was low (before or after 160 degrees C), thermal resistance ran short, and there was a problem that it could not be used in semi artificial leather manufacture or PVC leather manufacture.
[0008] Moreover, in a methyl pentene system resin type process releasing paper, there was a problem that a bond strength fall with a base paper and a mold-release characteristic resin layer arose, and exfoliation arose but [not between a mold-release characteristic resin layer and a synthetic leather layer] between a base paper and a mold-release characteristic resin layer as the use count in PVC leather manufacture increased, although the thermal resistance of a mold-release characteristic resin layer was satisfactory.
[0009] Furthermore, in an acrylic resin type process releasing paper, there were problems over the paper durability fall of the base paper after heating-at-high-temperature processing, pinhole generating of a mold-release characteristic resin layer, crack generating of the mold-release characteristic resin layer by the external force resulting from acrylic bridge formation type resin, and a process releasing paper, such as the difficulty of embossing.

[0010] It is made in view of such a situation, and it is usable under an elevated temperature, and exfoliation with a base paper and a mold-release characteristic resin layer does not occur, but this invention aims at offering the process releasing paper in which repeat use is possible.
[0011]
[Means for Solving the Problem] In order to attain such a purpose, the process releasing paper of this invention is a process releasing paper which has the mold-release characteristic resin layer formed in one [at least] field of a base paper and this base paper, and said base paper was considered as a configuration which contains N material in 10 - 60% of the weight of the range. Moreover, it considered as a configuration which is within the limits of [whose surface roughness (Rz) of said mold-release characteristic resin layer forming face is 15-30 micrometers at least] said base paper. And in the above-mentioned process releasing paper, the bulk density of said base paper is within the limits of 0.68 - 0.87 g/cm3, and it considered as a configuration [as / whose space pH is within the limits of 5-8].
[0012] Moreover, it considered as a configuration which is in within the limits whose thickness of a configuration [as / said whose mold-release characteristic resin layer is a methyl pentene system resin layer], and said mold-release characteristic resin layer is 25-100 micrometers. Moreover, said mold-release characteristic resin layer is in within the limits whose thickness of a configuration which is the multilayer structure which at least one layer becomes from a methyl pentene system resin layer, and said mold-release characteristic resin layer is 25-100 micrometers, and was considered as a configuration [as / whose thickness of a methyl pentene system resin layer is 25 micrometers or more].
[0013] Moreover, it considered as a configuration which is in within the limits whose thickness of a configuration which is the multilayer structure which said mold-release characteristic resin layer becomes from a methyl pentene system resin layer and a methyl pentene system resin constituent layer, and said mold-release characteristic resin layer is 25-100 micrometers. Furthermore, said mold-release characteristic resin layer has a concavo-convex pattern, and it considered as a configuration [as / whose thickness of the thinest part is 20 micrometers or more].
[0014] In above this inventions, a base paper shows very high bond strength to a mold-release characteristic resin layer, and the operation which prevents that a base paper and a mold-release characteristic resin layer exfoliate is made in the repeat use at the time of synthetic leather manufacture.
[0015]
[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing. Drawing 1 is the outline sectional view showing an example of the process releasing paper of this invention. In drawing 1 , the process releasing paper 1 consists of a base paper 2 and a mold-release characteristic resin layer 3 prepared in one field of this base paper 2, and the concavo-convex pattern (concavo-convex pattern) 4 is formed in the front face of the mold-release characteristic resin layer 3. In addition, although the concavo-convex pattern (concavo-convex pattern) 4 is formed in the mold-release characteristic resin layer 3 in the example of illustration, the process releasing paper of this invention may not have a concavo-convex pattern (concavo-convex pattern).
[0016] In such a process releasing paper 1 of this invention, N material content of a base paper 2 is preferably made into 20 - 40% of the weight of within the limits ten to 60% of the weight. When the content of N material in a base paper 2 is within the limits of the above, the surface roughness of a base paper serves as moderate range, the surface area to which only a base paper 2 is applied becomes large, bond strength with the mold-release characteristic resin layer 3 improves so that it may mention later, and it can prevent that exfoliation arises in the interface of a base paper 2 and the mold-release characteristic resin layer 3 in the time of the synthetic leather manufacture using the process releasing paper 1. Itsuki to the increase of the smooth nature of a base paper 2 and a base paper 2 who goes away mold-release characteristic resin layer 3 worsens that N material content of a base paper 2 is less than 10 % of the weight. On the other hand, if N material content of a base paper 2 exceeds 60 % of the weight, it will become difficult to form the good concavo-convex pattern 4 in the front face of the mold-release characteristic resin layer 3 by embossing which is mentioned later.
[0017] L material (hardwood pulp) usually serves as a subject, and, as for paper, such paper has good surface smoothness on the gestalt of fiber. On the other hand, when manufacturing the paper which has surface granularity, N material (softwood pulp) with large path of fiber and die length of fiber is blended, the clearance in paper is increased or bringing irregularity to a front face is performed. However, if there are too many contents of N material, fiber will serve as a big lump, a block will be formed, big ** and ** will be built, and the homogeneity of paper will be spoiled. For this reason, in this invention, N material content is set up as mentioned above. As N material used for a base paper 2, N-BKP, N-BSP, N-UKP, etc. can be mentioned, and L-BKP, L-UKP, etc. can be

mentioned as L material.
[0018] In addition, a base paper 2 makes a subject the above-mentioned N material and L material, and blends maculature and recycled pulp with this suitably. Moreover, as an additive, defoaming agents, such as an internal sizing compound, cation-ized starch, a fatty-acid-ester system, and special paraffin series, etc. can be used. In the size press process of base paper manufacture, coating of the size press liquid which blended corn starch, a surface sizing compound, etc. can be carried out to stencil paper. By passing through this size press process, size press liquid will be applied to both sides of a base paper, and it will sink also into the interior of a base paper.
[0019] By making N material content of a base paper 2 into the above-mentioned range, 15-30 micrometers (Rz) of surface roughness of the field of a base paper 2 which forms the mold-release characteristic resin layer 3 at least become within the limits of 18-22 micrometers preferably. When surface roughness (Rz) is within the limits of the above, the surface area to which only a base paper 2 is applied becomes large, bond strength with the mold-release characteristic resin layer 3 improves, and it can prevent that exfoliation arises in the interface of a base paper 2 and the mold-release characteristic resin layer 3 in the time of the synthetic leather manufacture using the process releasing paper 1. in addition, this invention -- setting -- the surface roughness (Rz) of a base paper 2 -- the shape of omnipotent surface type with analysis equipment by Kosaka Laboratory, Ltd. -- it considers as the ten-point average of roughness height measured by measuring instrument SE-3F.
[0020] Moreover, in this invention, it is desirable 0.68 - 0.87 g/cm3 and to make space pH into within the limits of 5-8 for the bulk density of a base paper 2 within the limits of 0.70 - 0.81 g/cm3 preferably. By making bulk density of a base paper 2 into within the limits of 0.68 - 0.87 g/cm3, it becomes easier to adjust surface roughness (Rz) within the limits of 15-30 micrometers. When the bulk density of a base paper 2 is less than [0.68g //cm] three, it may become difficult to form the good concavo-convex pattern 4 in the front face of the mold-release characteristic resin layer 3 by embossing which is mentioned later. Moreover, when the bulk density of a base paper 2 exceeds 0.87 g/cm3, Itsuki to a base paper 2 who goes away mold-release characteristic resin layer 3 may worsen.
[0021] In addition, in this invention, the layered product of the paper which has the above surface roughness (Rz), a plastic film, such as nylon, polyethylene terephthalate, and polypropylene, a metallic foil, textile fabrics, a nonwoven fabric, a synthetic paper, etc., etc. can be used as a base paper 2. In this case, it is required to locate the paper which has the above-mentioned surface roughness (Rz) in the field which forms the mold-release characteristic resin layer 3 at least.
[0022] It is desirable to set it as the thickness which the concavo-convex pattern 4 can form in the front face of the mold-release characteristic resin layer 3 by embossing which is mentioned later, for example, it can set up the thickness of such a base paper 2 in the range which is about 80-300 micrometers while it takes the ingredient to be used into consideration. Moreover, the field by the side of mold-release characteristic resin layer 3 formation of a base paper 2 may perform heating or corona discharge treatment beforehand, in order to raise the adhesion reinforcement of a base paper and a mold-release characteristic resin layer.
[0023] Resin with well-known alkyd resin, acrylic resin, polyethylene system resin, polypropylene regin, poly methyl pentene system resin, silicone system resin, ultraviolet curing mold resin, ionizing-radiation hardening mold resin, etc. can be used for the mold-release characteristic resin layer 3 which constitutes the process releasing paper 1, it can select it in consideration of detachability with the resin for synthetic leather, and thermal resistance, and poly methyl pentene system resin, polypropylene resin, and its alkyd resin are especially desirable. more -- desirable -- the mold-release characteristic resin layer 3 -- (1) methyl pentene system resin layer and (2) -- at least one layer can carry out to the multilayer structure which consists of a methyl pentene system resin layer, or the multilayer structure which consists of a (3) methyl pentene system resin layer and a methyl pentene system resin constituent layer.
[0024] The above-mentioned methyl pentene system resin layer can be formed using methyl pentene system resin. Here, methyl pentene system resin is a polymer which consists of a 4-methyl-1-pentene independent. With methyl pentene system resin, moreover, for example, 4-methyl-1-pentene and other alpha olefins, With for example, a copolymer with the alpha olefin of the carbon numbers 2-20, such as ethylene, a propylene, 1-butene, 1-hexene, 1-octene, 1-decene, 1-tetra-decene, and 1-octadecene And it is the copolymer which made the subject the 4-methyl-1-pentene which contains 4-methyl-1-pentene 97 to 98% of the weight, and contains an alpha olefin in 2 - 3% of the weight of the range. The melting point measured with the differential scanning calorimeter (DSC law) is 236-238 degrees C and ASTM. The melt flow rate (MFR) measured on conditions (load =2.16kg and temperature =260 degree C) according to D1238 is resin in the range for 160-200g / 10 minutes.
[0025] The above-mentioned methyl pentene system resin constituent layer can be formed using a methyl pentene system constituent. The copolymer which made the above-mentioned 4-methyl-1-pentene the subject with the

methyl pentene system constituent here (4-methyl-1-pentene 97 to 98% of the weight) As opposed to the copolymer 95 which contains an alpha olefin in 2 - 3% of the weight of the range, and the melting point has in 236-238 degrees C, and has MFR in the range for 160-200g / 10 minutes - 85 weight sections It is the constituent which carries out 5-15 weight section content of the polyethylene system resin which has 0.910-0.930g/cm of consistencies in the range of 3, and is in the range whose melting point measured with the differential scanning calorimeter (DSC law) is 100-110 degrees C, and has MFR in the range for 1.0-100g / 10 minutes.

[0026] As for the thickness of the mold-release characteristic resin layer 3 which consists of a methyl pentene system resin layer of the above (1), it is desirable that it is within the limits of 25-100 micrometers. When the process releasing paper 1 is repeated to PVC leather manufacture as thickness is less than 25 micrometers, and it is used, the plasticizer used as an ingredient of a PVC leather enters between the molecules of the mold-release characteristic resin layer 3, and an interface with a base paper 2 is invaded at hot environments and intervals, and it becomes easy to produce exfoliation by the interface of a base paper 2 and the mold-release characteristic resin layer 3. On the other hand, when it exceeds 100 micrometers, width-of-face curl of a process releasing paper may become large, and may cause the fall of workability.

[0027] The thickness of the mold-release characteristic resin layer 3 with the multilayer structure which at least one layer of the above (2) becomes from a methyl pentene system resin layer is within the limits of 25-100 micrometers, and it is desirable that the thickness of a methyl pentene system resin layer is 25 micrometers or more. When the thickness of the mold-release characteristic resin layer 3 exceeds 100 micrometers, width-of-face curl of a process releasing paper may become large, and may cause the fall of workability. Moreover, when the process releasing paper 1 is repeated to PVC leather manufacture as the thickness of the methyl pentene system resin layer which constitutes the mold-release characteristic resin layer 3 is less than 25 micrometers, and it is used, the plasticizer used as an ingredient of a PVC leather enters between the molecules of the mold-release characteristic resin layer 3, and an interface with a base paper 2 is invaded at hot environments and intervals, and it becomes easy to produce exfoliation by the interface of a base paper 2 and the mold-release characteristic resin layer 3.

[0028] As for the thickness of the mold-release characteristic resin layer 3 with the multilayer structure which consists of a methyl pentene system resin layer of the above (3), and a methyl pentene system resin constituent layer, it is desirable that it is within the limits of 25-100 micrometers. When the process releasing paper 1 is repeated to PVC leather manufacture as thickness is less than 25 micrometers, and it is used, it enters between the molecules of the methyl pentene system resin layer from which the plasticizer used as an ingredient of a PVC leather constitutes the mold-release characteristic resin layer 3, or a methyl pentene system resin constituent layer, and hot environments and an interval invade an interface with a base paper 2, and exfoliation by the interface of a base paper 2 and the mold-release characteristic resin layer 3 becomes easy to produce them. On the other hand, when it exceeds 100 micrometers, width-of-face curl of a process releasing paper may become large, and may cause the fall of workability. A methyl pentene system resin constituent layer and a methyl pentene system resin layer can make the mold-release characteristic resin layer 3 with the multilayer structure which consists of such a (3) methyl pentene system resin layer and a methyl pentene system resin constituent layer the two-layer structure by which the laminating was carried out for example, from a base paper 2 side. In this case, the bond strength with a base paper 2 can improve by the methyl pentene system resin constituent layer, and a bond strength fall with the base paper 2 and the mold-release characteristic resin layer 3 by the plasticizer DOP (dioctyl phthalate) for vinyl chlorides etc. can be prevented. Moreover, the thermal resistance and the mold-release characteristic which are required of synthetic leather manufacture are acquired by the methyl pentene system resin layer.

[0029] Formation of the mold-release characteristic resin layer 3 can be performed by the approach of applying the resin to be used on a base paper 2 by methods, such as a roll coat, a gravure coat, an extrusion coat, a knife coat, a MAIYA bar coat, and a dipping coat, etc. The hardening approaches of resin may be which approaches, such as the hardening methods, such as the heat-curing approach, ultraviolet rays, and ionizing radiation.

[0030] The process releasing paper which does not have the concavo-convex pattern 4 in the mold-release characteristic resin layer 3 is obtained according to the above processes. Moreover, the process releasing paper 1 which has the concavo-convex pattern (concavo-convex pattern) 4 in the mold-release characteristic resin layer 3 as shown in drawing 1 takes the following embossing processes. That is, the concavo-convex pattern (concavo-convex pattern) 4 is formed in the mold-release characteristic resin layer 3, pressuring the embossing machine which counters and is equipped with the embossing roll in which irregularity was formed, the paper roll which receives the irregularity, a metal roll, or a metal roll with the surface irregularity corresponding to the shape of toothing of an embossing roll for the above-mentioned mold-release characteristic resin layer 3 to contact an embossing roll for a process releasing paper with a sink and the heated embossing roll. Usually, 80-150 degrees C and a pressure have

[whenever / stoving temperature / of an embossing roll] desirable 40 - 100 kg/cm extent. In addition, the Taira press may perform embossing not only using a roll press but using the Taira embossing version.
[0031] Thus, when the concavo-convex pattern of arbitration is formed in the mold-release characteristic resin layer 3 by embossing, irregularity eats even into base paper 2 part a little, but since it is finally mostly formed in the mold-release characteristic resin layer 3, the part from which thickness and a consistency differ arises in the mold-release characteristic resin layer 3. And as for the thickness of the thinest part (densest part) of the mold-release characteristic resin layer 3 with the concavo-convex pattern (concavo-convex pattern) 4, it is desirable that it is 20 micrometers or more. When the process releasing paper 1 is repeated to PVC leather manufacture as the thickness of the thinest part is less than 20 micrometers, and it is used, the plasticizer used as an ingredient of a PVC leather sinks in from the thinest part of the mold-release characteristic resin layer 3, hot environments and an interval invade an interface with a base paper 2, and exfoliation by the interface of a base paper 2 and the mold-release characteristic resin layer 3 becomes easy to produce them.
[0032] Next, manufacture of the synthetic leather using the process releasing paper of this invention is explained. First, the resin constituent for synthetic leather is applied on the mold-release characteristic resin layer of a process releasing paper. The pattern (concavo-convex pattern) corresponding to the concavo-convex pattern configuration of a mold-release characteristic resin layer is formed in the resin layer applied on the mold-release characteristic resin layer. Then, after drying lamination and a resin layer to this and cooling base fabrics (for example, textile fabrics, a nonwoven fabric, etc.) to it, it exfoliates in it and synthetic leather can be obtained to it.
[0033] Resin, such as polyurethane and a polyvinyl chloride, can be used for the resin constituent for the above-mentioned synthetic leather. When using polyurethane, it is desirable to make solid content of a resin constituent into about 20 - 50%. Moreover, when using a polyvinyl chloride, it is desirable to use the resin constituent which mixed with plasticizers, such as a dioctyl phthalate and dilauryl phthalate, the foaming agent, the stabilizer, etc., and was distributed. As the method of application of this resin constituent, the method of application with conventionally well-known a knife coat, a roll coat, a gravure coat, etc. can be mentioned. In manufacture of the synthetic leather using the process releasing paper of such this invention, in the PVC leather manufacture performed under an elevated temperature, it also sets, exfoliation between a base paper and a mold-release characteristic resin layer is prevented, and repeat stability production is attained.
[0034]
[Example] Next, a concrete example is shown and this invention is further explained to a detail.
[0035] To the pulp slurry which carried out beating of the pulp raw material which blended [production of base paper] N material (N-BKP), and L material (L-BKP) at five sorts of a rate shown in the following table 1 among 410-450 degrees C, the AKD (SSmade from Japanese PMC- 362) neutral sizing compound was added as a sizing compound, and the melamine was added 0.5% of the weight as a humid paper durability agent 0.1% of the weight. Subsequently, this pulp slurry was adjusted to pH5.5, stencil paper was milled, spreading of oxidized starch 1 g/m2 and PVA0.5 g/m2 was carried out to both sides at the size press process, the paper of basis-weight 125 g/m2 was milled, the slitting machine was carried out to width of face of 1530mm, and five sorts of base papers (A-E) shown in the following table 1 were obtained. The surface roughness (Rz) of these base papers, bulk density, and Space pH were measured, and it was shown in the following table 1.
[0036]
[Table 1]

表 1

基材	N材含有量 (重量%)	L材含有量 (重量%)	表面粗さ (μm)	緊度 (g/cm³)	紙面ｐＨ
A	１０	９０	１５	０．８６	５．５
B	４０	６０	２０	０．７３	５．５
C	６０	４０	３０	０．６９	５．５
D	０	１００	１２	０．８９	５．５
E	７０	３０	３５	０．６６	５．５

[0037] [formation of a mold-release characteristic resin layer] -- two sorts of following resin (I, II) was first prepared as resin for mold-release characteristic resin stratification.

[0038] - Resin I (methyl pentene system resin) : Mitsui Chemicals, Inc. make TPX DX820 (melting point = degrees C [238], 10 MFR=g [180g /], minutes)
[0039]
- Resin II (methyl pentene system constituent) : Resin by Mitsui Chemicals, Inc. Copolymer which made 4-methyl-1-pentene the subject -- 90 weight sections (the melting point of the copolymer which made 4-methyl-1-pentene the subject = 238 degrees C, 10 MFR=200g /, minutes)
Polyethylene system resin -- Ten weight sections (consistency =0.917g/cm3 of polyethylene system resin, the melting point = 106 degrees C, 10 MFR=7.2g /, minutes)
[0040] Next, five sorts of base papers (A-E) and two sorts of resin (I, II) which were produced as mentioned above were combined as shown in the following table 2, resin was extruded on the extrusion conditions shown in Table 2, and it applied by the coat method, it dried, and the mold-release characteristic resin layer was formed. The thickness of each formed mold-release characteristic resin layer is as being shown in the following table 2. In addition, in Table 2, when a mold-release characteristic resin layer is two-layer structure, a base paper side is made into the 2nd layer. Moreover, when a mold-release characteristic resin layer was monolayer structure, resin and thickness were indicated in the column of the 2nd layer.
[0041] [Embossing] To the embossing machine which countered and was subsequently equipped with the embossing roll and the paper roll in which irregularity was formed, it let the base paper in which the above-mentioned mold-release characteristic resin layer was formed pass so that a mold-release characteristic resin layer might contact an embossing roll, and the concavo-convex pattern was formed in the mold-release characteristic resin layer, and 18 sorts of process releasing papers (samples 1-18) were obtained. In addition, the pressurization to the mold-release characteristic resin layer according the temperature of an embossing roll to 120 degrees C and an embossing roll was set as 60 kg/cm. The thickness of the thinest part of the mold-release characteristic resin layer in which such a concavo-convex pattern (pattern) was formed was measured, and it was shown in the following table 2.
[0042] [manufacture of synthetic leather] -- synthetic leather was produced using 18 sorts of process releasing papers (samples 1-18) produced as mentioned above. That is, first, the PVC resin constituent for synthetic leather epidermis which contained the 60 sections and a foaming agent in the five sections, and contained [PVC resin (molecular weight 1000)] the stabilizer for the 100 sections and DOP (plasticizer) at a rate of the 2.5 sections was applied to the mold-release characteristic resin layer side of a process releasing paper by the knife coat method, and it dried (for 190-200 degrees C and 2 minutes). Then, urethane system adhesives were applied by the knife coat method, it dried, and the synthetic leather which has a base fabric in this adhesive coated surface, and has a lamination and irregularity pattern corresponding to [dry, exfoliate from a process releasing paper after aging, and] a concavo-convex pattern in a mold-release characteristic resin layer was obtained. In addition, production of the above-mentioned synthetic leather was performed under the environment of the temperature of 25 degrees C, and 20% of humidity, and it repeated 10 times on these conditions. Moreover, the bond strength of the base paper of each process releasing paper and a mold-release characteristic resin layer was measured under the environment of the temperature of 23 degrees C, and 50% of humidity with the tension strength test machine on condition that sample width of face of 15mm, and 200mm [in tension rate] exfoliation [part 90 degree] for /, and the result was shown in the following table 2.
[0043]
[Table 2]

表 2

工程剥離紙	基紙	離型性樹脂層の樹脂、厚み		押し出し条件 (℃)	最薄部厚み (μm)	接着強度 (N／m)
		第1層	第2層（単層）			
1	A	I 25μm	II 25μm	320	25	45.5
2	B	I 25μm	II 25μm	320	25	45.8
3	C	I 25μm	II 25μm	320	25	45.9
4	A	——	II 50μm	320	25	44.3
5	B	——	II 50μm	320	25	44.6
6	C	——	II 50μm	320	25	45.0
7	B	I 30μm	II 30μm	320	35	45.6
8	B	I 40μm	II 40μm	320	55	45.8
9	D	I 60μm	II 60μm	320	80	48.0
10	D	I 10μm	II 10μm	320	10	16.5
11	D	I 25μm	II 25μm	310	15	29.5
12	D	I 25μm	II 25μm	320	10	13.0
13	D	I 25μm	II 25μm	320	25	33.2
14	E	I 60μm	II 60μm	320	80	48.0
15	E	I 10μm	II 10μm	320	10	19.5
16	E	I 25μm	II 25μm	310	15	29.5
17	E	I 25μm	II 25μm	320	10	17.5
18	E	I 25μm	II 25μm	320	25	34.5

[0044] The surface roughness (Rz) of a base paper is the range which is 15-30 micrometers, and exfoliation with a base paper and a mold-release characteristic resin layer did not generate the samples 1-8 in the range whose content of N material of a base paper is 10 - 60 % of the weight among the process releasing papers shown in Table 2 in ten synthetic leather manufactures.

[0045] On the other hand, in synthetic leather manufacture, the following faults produced the process releasing paper (samples 9-13) using the base paper whose content of N material is less than 10 % of the weight, and the process releasing paper (samples 14-18) using the base paper to which the content of N material exceeds 60 % of the weight.

Samples 9 and 14: Width-of-face curl arose and the workability fall at the time of synthetic leather manufacture was caused.

Samples 10-13: The bond strength of a base paper and a mold-release characteristic resin layer was low, and exfoliation with a base paper and a mold-release characteristic resin layer was seen in the synthetic leather manufacture which is 10 times.

Samples 14-18: The pattern [that surface roughness is large] of the mold-release characteristic resin stratification plane which passed over which and carried out embossing did not become what followed the concavo-convex pattern of an embossing roll completely.

[0046]

[Effect of the Invention] Since according to this invention a process releasing paper is considered as the configuration which consists of a layered product of a base paper and the mold-release characteristic resin layer in which it was prepared in one [at least] field of this base paper and a base paper contains N material in 10 - 60% of the weight of the range as explained in full detail above Even if the bond strength of a base paper and a mold-release characteristic resin layer improves and it uses it in manufacture of the synthetic leather using the process

releasing paper of this invention repeatedly, it is prevented that a base paper and a mold-release characteristic resin layer exfoliate. Moreover, the PVC leather manufacture under an elevated temperature is attained by using methyl pentene system resin for a mold-release characteristic resin layer.

[Translation done.]